

HOLOGRAPHIC SPECTRAL FILTER

ABSTRACT

5 Method and apparatus are contemplated for receiving from an input, an optical
signal in a volume hologram comprising a transfer function that may comprise temporal
or spectral information, and spatial transformation information; diffracting the optical
signal; and transmitting the diffracted optical signal to an output. A plurality of inputs
and outputs may be coupled to the volume hologram. The transformation may be a linear
10 superposition of transforms, with each transform acting on an input signal or on a
component of an input signal. Each transform may act to focus one or more input signals
to one or more output ports. A volume hologram may be made by various techniques,
and from various materials. A transform function may be calculated by simulating the
collision of a design input signal with a design output signal.

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